

REMARKS/ARGUMENTS

In the Claims:

Claims 1-37 remain in this application. Claims 38-49 are new.

Claims 1, 20, and 31 have been amended.

Claim Rejections

Rejections under 35 U.S.C. § 102

1. Claims 1-10; 13-15; 17; 19-27; 29 and 32-37 were rejected under 35 U.S.C. 102(e) as being anticipated by Mu et al., (US 2002/0070443A1) (hereinafter "Mu").

Mu fails to disclose a single metallization layer that is directly connected to conductive contacts on a die and has landing pads as recited in claims 1, 20, and 29; the rejections are not supported by the art and should be withdrawn. Mu teaches a **first** metallization layer that does not have landing pads (Mu, Fig. 14, paragraph 0034) and a **second** metallization layer that includes landing pads but is not directly connected to a die (Mu, Fig. 17).

The Examiner has failed to make a proper prima facie rejection of claims 3-10, 13-15, 17, 19, 21-23, 25-27, and 32-37 under 35 U.S.C. 102(b). When making a rejection, the Examiner should set forth the relevant teachings of the prior art relied upon, including reference to the relevant column and line numbers (MPEP 706.02(j)). The Examiner failed to set forth the relevant teachings relied upon to reject claims 3-10, 13-15, 17, 19, 21-27, and 32-37 because the Examiner failed to state that the reference

disclosed the limitations recited in claims 3-10, 13-15, 17, 19, 21-27, and 32-37, much less state where in the reference such disclosure could be found.

Even absent proper rejections, Applicants have searched Mu and found that it appears that Mu fails to disclose all limitations of any of claims 3-10, 13-15, 17, 19, 21-27, and 32-37. For each of claims 3-10, 13-15, 17, 19, 21-27, and 32-37, Applicants state below selected limitations that Mu appears to fail to disclose, and for which the Examiner has failed to make a proper prima facie rejection. Applicants request that the Examiner either withdraw the rejections or state what teachings of Mu the Examiner is relying upon to reject claims 3-10, 13-15, 17, 19, 21-27, and 32-37, so that Applicants may prepare a proper response.

With regard to claims 8-10, 13-15, 17, 25-27, and 33-37, the claims recite a variety of features of the metallization layer. These features include a signal landing pad (claims 8, 9, 27, and 36), a transmission line segment (claims 9, 10, and 27), a microstrip transmission structure (claim 10), conductive lines and traces (claims 13 and 37), a power plane (claim 14), power strips (claim 15 and 17), ground strips (claims 15 and 17), a power landing pad (claims 25, 33, and 35), ground landing pad (claims 26, 33, 34, and 35). Mu, simply discloses a metallization layer, and does not disclose the claimed limitations.

With regards to claims 5-9, 13, 15, 25-27, 32-34, and 36-37, the claims recite a variety of features of electrical connections on the die. These features include power bars (claims 5, 32, and 33), ground bars (claims 5, 6, and 34), signal bond pads (claims 7, 8, 9, 13, 27, 32, and 36), power bond pads (claims 15 and 25), ground bond pads (claims 15 and 26), ground bars (claim 32), and power and ground contacts (claim 37).

Mu simply discloses a die with conductive conducts, and fails to disclose the claimed limitations.

With regards to claims 3, 4, 17, 19, 21-23, and 37, the claims recite a variety of other features. These features include a landing pad pitch significantly greater or at least two times greater than a bond pad pitch (claims 3 and 4), a capacitor (claims 17, 21, and 37), a microprocessor (claims 19 and 23), and a computer motherboard (claim 22). Mu fails to disclose the aforementioned limitations.

2. Claims 1-37 were rejected under 35 U.S.C. 102(e) as being anticipated by Akagawa (US 6,590,291).

Contrary to Examiner's assertion, Akagawa does not disclose a die fixed within a package core by encapsulation material as recited in claims 1, 20, and 29; the rejection is not supported by the art and should be withdrawn. In contrast to claims 1, 20, and 29, Akagawa discloses forming a layer of resin 26 over the top and sides of the chip 40.

Contrary to Examiner's assertion, Akagawa does not disclose a landing pad pitch significantly greater than a bond pad pitch as recited in claim 3; the rejection is not supported by the art and should be withdrawn. In the portion of Akagawa cited, Akagawa discusses wiring pattern 29, but does not discuss landing pad pitch.

Contrary to Examiner's assertion, Akagawa does not disclose power bars and ground bars on a central portion of an upper surface of a die as recited in claims 5 and 32. The rejection is not supported by the art and should be withdrawn. In contrast to claims 5 and 32, referenced elements 29c/27/23 are not on a central portion of an upper surface of die 40. (Akagawa, Fig. 1).

Claims 7 and 32 recite a plurality of signal bond pads distributed within a peripheral region of a surface thereof. Similarly, claims 8, 9, 13, 27, and 36 also recite signal bond pads. Contrary to the Examiner's statement, Akagawa does not teach or discuss signal bond pads, merely discussing electrode pads. (Akagawa at Col. 5, Lines 37-44).

Claims 11, 28, and 30 recite a metallic cladding providing a ground structure. Contrary to the Examiner's assertion, Akagawa does not teach a metallic cladding providing a ground structure; the rejection is not supported by the art and should be withdrawn. In contrast to providing a ground structure, Akagawa discusses using copper foils as a power supply layer during an electroplating step (Akagawa at Col 7, lines 13-17) and patterning the copper foils for a wiring pattern. (Akagawa at Col 5, lines 32-36).

The Examiner has failed to make a proper prima facie rejection of claims 9-17, 19, 21-23, 25-28, 30-35, and 37 under 35 U.S.C. 102(b). When making a rejection, the Examiner should set forth the relevant teachings of the prior art relied upon, including reference to the relevant column and line numbers (MPEP 706.02(j)). The Examiner failed to set forth the relevant teachings relied upon to reject claims 9-17, 19, 21-23, 25-28, 30-35, and 37 because the Examiner failed to state that the reference disclosed the limitations recited in claims 9-17, 19, 21-23, 25-28, 30-35, and 37, much less state where in the reference such disclosure could be found.

Even absent proper rejections, Applicants have searched Akagawa and found that it appears that Akagawa fails to disclose all limitations of any of claims 9-17, 19, 21-23, 25-28, 30-35, and 37, Applicants state below selected limitations that Akagawa

appears to fail to disclose, and for which the Examiner has failed to make a proper prima facie rejection. Applicants request that the Examiner either withdraw the rejections or state what teachings of Akagawa the Examiner is relying upon to reject claims 9-17, 19, 21-23, 25-28, 30-35, and 37, so that Applicants may prepare a proper response.

With regard to claims 9-17, 25-28, 30-31, 33-35, and 37, the claims recite a variety of features of the metallization layer. These features include a transmission line segment (claims 9-11 and 27-28), a microstrip transmission structure (claims 10 and 30), conductive lines and traces (claims 13 and 37), a power plane (claim 14), power strips (claim 15 and 17), ground strips (claims 15-17), a power landing pad (claims 25, 33, and 35), and ground landing pad (claims 12, 26, 31, and 33-35). Akagawa simply discloses a wiring pattern and does not disclose the claimed limitations.

With regards to claims 15, 25-26, 32, and 37, the claims recite a variety of features of electrical connections on the die. These features include power bond pads (claims 15 and 25), ground bond pads (claims 15 and 26), ground bars (claim 32), and power and ground contacts (claim 37). Akagawa simply discloses a die with electrode pads and does not disclose the claimed limitations.

With regard to claims 17, 19, 21-23, 35, and 37, the claims recite a variety of other features. These features include a capacitor (17, 21, 35, and 37), microprocessor (19 and 23), and computer motherboard (22). Akagawa fails to disclose the aforementioned limitations.

Rejections under 35 U.S.C. § 103

3. Claim 4 was rejected under 35 U.S.C. 103(a) as being anticipated by Akagawa (US 6,590,291).

Claim 4 depends from dependent claim 3, which depends from independent claim 1. Independent claim 1 is currently amended. As discussed above, claim 1 is patentable over Akagawa. Based at least in part on its dependency, claim 4 is patentable over Akagawa.

Conclusion:

Applicant respectfully submits that claims 1-49 are patentable, and accordingly, the application is now in condition for allowance. Early issuance of the Notice of Allowance is respectfully requested.

The Commissioner is hereby authorized to charge shortages or credit overpayments to Deposit Account No. 500393. A Fee Transmittal is enclosed in duplicate for fee processing purposes. The Examiner is invited to call Gregory D. Caldwell at (503) 684-6200 if there remains any issue with allowance of this case.

Respectfully submitted,

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